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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/658,136	09/08/2000	Shigetsugu Okamoto	1248-0516P-SP	3543

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EXAMINER	
SHENG, TOM V	

ART UNIT	PAPER NUMBER
2673	

DATE MAILED: 07/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/658,136	OKAMOTO ET AL.	
	Examiner	Art Unit	
	Tom V Sheng	2673	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 May 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,7,9-11,13-16,18 and 21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,7,9-11,13-16,18 and 21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 May 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 6.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-4, 7, 9, 11, 13-16, 18, 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mikoshiba (IDW 1996, pp. 251-254) in view of Mikoshiba et al. (US 5,907,316).

As for claims 1, 2, 7, Mikoshiba teaches a motion picture pseudo contour correcting method (figures 5 and 6; pp. 253, column 2, line 14 to pp. 254, column 2, line 7) comprising the steps of:

(a) detecting a gray level shift from a focused pixel in a frame of a motion picture to an adjacent pixel in the frame (pixel with 128th level on the right as the focused pixel and pixel with the 127th level on the left as the adjacent pixel with gray level difference as the gray level shift), as gray level information of the focused pixel;

(b) detecting a motion vector indicative of a speed (by counting the number of pixels that experience the bit-variation) and a direction (by comparing the number of these pixels in the horizontal and vertical directions) of motion of a picture from the focused pixel to another pixel, as motion information of the focused pixel.

Mikoshiba further teaches adding motion-dependent equalizing pulses to these pixels that experienced the bit-variation. However, Mikoshiba does not teach generating a correction gray level signal (i.e. a motion-dependent equalizing pulse) using logical formulae formularized for each motion picture pseudo contour generation based on generation patterns classified according to the respective gray level information of the focused pixel and adjacent pixel, and the motion information.

The same inventor, in patent US 5,907,316, teaches adding equivalent pulse of additive or subtractive value (EPA or EPS) based on the emission block where contour defect occurs. See figures 41A through 45 and column 22, lines 9-62. One of ordinary skill in the art would recognize that the equivalent pulse is determined methodically based on the gray level changes and also the direction of change as shown in the figures.

It would have been obvious for one of ordinary skill in the art at the time the invention was made to incorporate the EP determination method into the determination of the equalizing pulses needed for the target and affected adjacent pixels as well, because the method serves effectively to minimize the dynamic pseudo contour. The determination of equivalent pulse varies with emission blocks used and thus reads on claimed logical formulae.

As for claim 3, obviously the pixels affected by the motion picture pseudo contour effect are to be corrected.

As for claims 4 and 11, Mikoshiba does not teach capping at 4 as the most pseudo contour affected pixels to be correction. However, it is a practical matter for the trade-off as the benefit of correcting a farther affected pixel has become small.

As for claim 9, Mikoshiba teaches that the number of adjacent pixels affected by bit-variation directly corresponds to the image speed (pixels/frame). Since a motion picture starts with 1 pixel/frame, the number of pixels affected is not less than one as claimed.

As for claims 13 and 21, the rejection analysis of claim 1 applies in the case where each pixel shift is considered one group of gray level shifts.

As for claim 14, Mikoshiba's comparing of the horizontal and vertical directions read on claimed components in two directions. Moreover, even in the horizontal or vertical direction, there are inherently positive and negative directions.

Claims 15 and 18 are device claims corresponding to method claim 1 and are rejected accordingly.

Claim 16 is rejected per rejection analysis of claim 2.

3. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mikoshiba/Mikoshiba as applied to claim 7 above, and further in view of Nito et al. (JP 7152017 A).

As for claim 10, Mikoshiba teaches the use of time division method in motion picture pseudo contour correction. Mikoshiba does not teach using a pixel division method.

Nito teaches a pixel division method (the number of divisions of data electrode constituting one pixel is given as n and the number of times of line addressing per one pixel in one field is given as m; page 4, paragraph 44). Nito further teaches that a combined driving method can be formed by combining above pixel division method with a pulse width modulation method (paragraph 45).

Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to combine Mikoshiba's time division method (a pulse width modulation method) and Nito's pixel division method, because of the further improvement in gradation display characteristics.

Response to Arguments

4. Applicant's arguments with respect to claims 1-4, 7, 9-11, 13-16 and 18 have been considered but are moot in view of the new ground(s) of rejection.

Examiner's Comment

5. If the applicants define the logical formulae as shown in figure 34 in claims 1, 7, 13, 15, 18 and 21, the current rejection will be overcome.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom V Sheng whose telephone number is (703) 305-6708. The examiner can normally be reached on 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (703) 305-4938. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tom Sheng
July 19, 2004

Lun-Yi Lao
Primary Examiner